

FY2006

FORT CARSON

**COMPLIANCE-RELATED
CLEANUP
INSTALLATION ACTION PLAN**

Printed August 2005

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Compliance-Related Cleanup (CC) Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern, and propose a comprehensive approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the CC manager, IMA-Northwest Region, Fort Carson, U.S. Army Environmental Center (USAEC), executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change. Under current project funding, all remedies will be in place at Fort Carson by the end of 2011.

The following persons contributed to the formulation and completion of this Installation Action Plan:

Deb Anderson	Colorado Department of Public Health and Environment
Tim Blume	AEC Western Region Office
Stephanie Carter	Fort Carson IRP/Engineering & Environment, Inc.
Susan Chaki	Colorado Department of Public Health and Environment
Michael Cosby	Colorado Department of Public Health and Environment
Judy Flook	Fort Carson/PBC-APLEN
Russ Hamilton	Fort Carson, SJA
Missy Holland	U.S. Army Corps of Engineers, Omaha District
Doug Jardine	Fort Carson RAB, Community Co-Chair
Burla Martin	Fort Carson, DECAM
Agnes Maxwell	Engineering & Environment, Inc. (supporting AEC)
Robert Noyes	Engineering & Environment, Inc. (supporting AEC)
William Rogers	Fort Carson IRP
Margaret Schwartz	Colorado Department of Public Health and Environment
Jerome Stolinski	U.S. Army Corps of Engineers, Omaha District
JoAnn Watson	U.S. Army Environmental Center

Table of Contents

<i>Statement of Purpose</i>	1
<i>Approval/Concurrence</i>	2
<i>Table of Contents</i>	3
<i>Acronyms & Abbreviations</i>	5
INSTALLATION INFORMATION	7
CLEANUP PROGRAM SUMMARY	9
INSTALLATION RESTORATION PROGRAM	
<i>CC Summary</i>	11
<i>CC Contamination Assessment</i>	12
SITE DESCRIPTIONS	
SOLID WASTE MANAGEMENT UNITS (SWMUs)	
<i>CC SW001 LANDFILL 1</i>	15
<i>CC SW006 LANDFILL 6 (1942-1946)</i>	16
<i>CC SW011 LANDFILL 11</i>	17
<i>CC SW021 INDUSTRIAL WASTEWATER TREATMENT PLANT (ACTIVE)</i>	18
<i>CC SW022 SEWAGE TREATMENT PLANT (ACTIVE)</i>	19
<i>CC SW023 SEWAGE TREATMENT LAGOONS (2) (ACTIVE)</i>	20
<i>CC SW025 FORMER OPEN DUMPING AREA, RANGE 121</i>	21
<i>CC SW026 EQUALIZATION BASIN, BLDG 1399 (ACTIVE)</i>	22
<i>CC SW028 BATTERY ACID NEUTRALIZATION SHOP (ACTIVE)</i>	23
<i>CC SW032 GOLF COURSE HOLDING POND</i>	24
<i>CC SW033 GOLF COURSE SPREADING TRTMNT PLT EFFLU</i>	25
<i>CC SW035 NEW CENTRAL WASH RACK</i>	26
<i>CC SW047 RANGE 121, OPEN DETONATION GROUNDS</i>	27
<i>CC SW048 RANGE 123, OPEN BURN GROUNDS</i>	28
<i>CC SW049 HAZ WASTE & PCB STOR FAC, BLDG 9248</i>	29
<i>CC SW052 HAPPY HOLLOW 90-DAY STORAGE CONSOLIDATION AREA</i>	30
<i>CC SW163 FORMER CARSON SEWER SYSTEM</i>	31
<i>CC SW165 FORMER LIME PIT SITE IN BLDG 8110</i>	32
<i>CC SW166 WASH RACK SITE NORTH OF BLDG 8110</i>	33
<i>CC SW169 BUILDING 1212</i>	34
<i>CC SW170 CONSTRUCTION DEBRIS AREA - INACTIVE LANDFILL 1</i>	35
OFFICE OF OIL AND PUBLIC SAFETY (OPS) SITES	
<i>CC063 UST AT BUILDING 2492</i>	36
<i>CC066 UST AT BUILDING 3192</i>	37
<i>CC067 UST AT BUILDING 8200</i>	38
<i>CC084 UST AT BUILDING 1515</i>	39

OFFICE OF OIL AND PUBLIC SAFETY (OPS) SITES (Cont.)

CC085 UST AT BUILDING 1882..... 40

CC086 UST AT BUILDING 9606..... 41

CC090 UST AT BUILDING 1982..... 42

CC098 UST AT BUILDING 9628..... 43

CC101 UST AT BUILDING 9609..... 44

CC102 UST AT BUILDINGS 980 and 981..... 45

CC103 UST AT BUILDINGS 1382 and 1392..... 46

CC104 UST AT BUILDINGS 9647 and 9648..... 47

SCHEDULE

Past/Projected Milestones..... 48

Schedule Chart48-1

COST

Prior/Current Year Funding 49

Unconstrained (Required) Cost-to-Complete Chart - not included.....49-1

COMMUNITY INVOLVEMENT

Restoration Advisory Board Status 50

Acronyms & Abbreviations

AAFES	Army Air Force Exchange Services
AEC	Army Environmental Center
AEDB-CC	Army Environmental Database – Compliance Cleanup
AEDB-R	Army Environmental Database – Restoration
AS	Air Sparging
BDU	Bomb Dummy Units
BECS	Butts East Combined Sites
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAP	Corrective Action Plan
CC	Compliance-Related Cleanup
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
CGWS	Colorado Groundwater Standards
CLA	Combined Landfill Area
CMI(C)	Corrective Measure Implementation (Construction)
CMI(O)	Corrective Measure Implementation (Operation)
CMS	Corrective Measure Study
COC	Contaminants of Concern
COE	Corps of Engineers
CTC	Cost-to-Complete
CY	Cubic yard
DCE	1,2-Dichloroethene
DECAM	Directorate of Environmental Compliance and Management
DES	Design
DPW	Directorate of Public Works
DRMO	Defense Reutilization Marketing Office
EPA	(United States) Environmental Protection Agency
FOS	Free-oil Separator
FTC	Fort Carson
FY	Fiscal Year
GW	Groundwater
IAP	Installation Action Plan
IMA	Installation Management Agency
INV	Investigation
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISC	Initial Site Characterization
ISCR	Initial Site Characterization Report
IWTP	Industrial Wastewater Treatment Plant
K	\$1,000
LNAPL	Light Non-Aqueous Phase Liquids
MFR	Memorandum For Record
mg	milligrams
MNA	Monitored Natural Attenuation

Acronyms & Abbreviations

MTBE	Methyl Tertiary Butyl Ether
NE	Not Evaluated
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NWR	Northwest Region
OMA	Operations & Maintenance Account
OPS	Oil & Public Safety
ORC	Oxygen Released Compounds
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyls
PCE	Perchloroethane (Tetrachloroethane)
POL	Petroleum, Oil & Lubricants
RA	Remedial Action
RAB	Restoration Advisory Board
RACER	Remedial Action Cost Engineering Requirements System
RBSLs	Risk Based Screening Levels
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RDX	Cyclotrimethyletrinitramine
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RIP	Remedy in Place
SAIC	Science Applications International Corporation
SCR	Site Characterization Report
SJA	Staff Judge Advocate
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TCA	1-1-Tetrachloroethane
TCE	Trichloroethylene
TEPH	Total Extractable Petroleum Hydrocarbons
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
TVPH	Total Volatile Petroleum Hydrocarbons
ug/l	microgram per liter
USAEHA	United States Army Environmental Hygiene Agency (now USACHPPM)
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compounds
yr	year

INSTALLATION LOCALE:

Construction of Camp Carson began in 1942, shortly after the bombing of Pearl Harbor. The installation was known originally as Camp Carson (named after the frontier hero, General “Kit” Carson), and served primarily as a training facility for more than 100,000 soldiers during World War II. The 71st, 89th, and 104th Infantry Divisions trained at the installation. The Camp was also the site of the Mountain Training Center, the Army Nurse Corps Training Center, and an internment camp for 9,000 German and Italian prisoners of war.

In 1946, the War Department declared Camp Carson a permanent military post. Activities at the Camp were greatly reduced, and only 600 personnel remained at the site. During the 1950s, the mission of Camp Carson continued to be basic and advanced training for combat-ready troops. Reserve and National Guard units were located on site during the Korean Conflict, and Camp Carson served as a separation center where more than 100,000 soldiers were processed between 1951 and 1953. In 1954, the name of the installation was officially changed from Camp Carson to Fort Carson.

INSTALLATION MISSION:

The primary mission of Fort Carson is the training and readiness of all assigned and attached troops to ensure combat-ready forces. Fort Carson also serves several off-post satellite units and activities in its geographical area of responsibility. The U.S. Air Force Academy, Cheyenne Mountain Air Station, Peterson AFB, and 58 Reserve components in nine states also utilize Fort Carson administrative, training, logistical, and other services.

COMMAND ORGANIZATION:

Major Command: Installation Management Agency (IMA)

Installation: Headquarters 7th Infantry Division and Fort Carson

REGULATOR PARTICIPATION:

Federal: U.S. Environmental Protection Agency (EPA), Region VIII, Federal Facilities Branch

State: Colorado Department of Public Health and Environment (CDPHE) and

Colorado Department of Labor and Employment, Division of Oil and Public Safety (OPS)

RCRA STATUS:

- Large Quantity Generator
- RCRA Part B Permit effective Oct. 29, 1995 #CO2210020150
- Interim Subpart X Permit (Under Negotiation)

Fort Carson RCRA regulated via RCRA Part B Permit (effective October 29, 1995 and expires in 2005 #CO2210020150). As of the date of this IAP, Fort Carson is currently renewing the RCRA Part B Permit.

RAB/TRC/TAPP STATUS: RAB formed in 1994. Currently active.

Installation Information

HISTORIC ACTIVITY: Construction of Camp Carson began in 1942, shortly after the bombing of Pearl Harbor. The installation was known originally as Camp Carson (named after the frontier hero, General “Kit” Carson), and served primarily as a training facility for more than 100,000 soldiers during World War II. The 71st, 89th, and 104th Infantry Divisions trained at the installation. The Camp was also the site of the Mountain Training Center, the Army Nurse Corps Training Center, and an internment camp for 9,000 German and Italian prisoners of war.

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In 1961, Fort Carson was selected as the site for a new army-training center, but the center was phased out after 1 year. The 5th Infantry Division (Mechanized) was activated and stationed at Fort Carson between 1962 and 1964.

In 1965, approximately 78,500 acres were acquired, increasing the size of the installation to 137,403 acres. Fort Carson was now large enough to support and train an entire division. Concurrently, military strength at Fort Carson was increased from 10,000 to 25,000 troops between 1965 and 1967 with the escalation of the Vietnam conflict. In July and August of 1965, two floods occurred in the region that caused major damage to the area and the installation. The first flood resulted in the loss of several lives and \$100 million in damage to the region, and the second flood caused \$160,000 in damages at the installation.

Throughout the 1970s, the mission of Fort Carson continued to be the maintenance and training of combat-ready troops. The 4th Infantry Division (Mechanized), also known as the “Iron Horsemen,” was redeployed to Fort Carson from Vietnam. During 1995, Fort Carson became the home of the 10th Special Forces Group and the 3rd Armored Cavalry Regiment in addition to the 43rd Support Group. Two brigades of the 4th Infantry Division along with the Division Headquarters were moved to Fort Hood, TX. The 3rd Brigade remained at Fort Carson. As of 1995, approximately 20,000 personnel carried out operations at Fort Carson.

The principal industrial operations at Fort Carson have been the repair and maintenance of vehicles and aircraft. The Consolidated Maintenance Facility (Bldg. 8000) performs specialized repair of tactical and heavy construction and engineering equipment. Vehicle maintenance, at all unit motor pools, includes routine oil changes, lubes, wash downs, and refueling.

On June 4, 1999, the 7th Infantry Division was activated at Fort Carson as an Integrated Division (composed of an Active Component and Army National Guard Units). With its headquarters at Fort Carson, the Division consists of the 39th Infantry Brigade (Arkansas), the 41st Infantry Brigade (Oregon), and the 45th Infantry Brigade (Oklahoma). The Division was originally activated on December 10, 1917.

Cleanup Program Summary

CLEANUP PROGRAM SUMMARY:

There are currently 33 Compliance-related Cleanup Sites identified at Fort Carson. Fort Carson plans to have Remedy in Place by FY2020.

CC PROGRAM PROGRESS:

Sites granted NFA by permit: 1

Sites granted NFA by process: 1

To date, a total of five Compliance Orders have been issued to Fort Carson by the CDPHE. The Compliance Orders are dated April 29, 1988, November 18, 1994, March 10, 1997, July 30, 1998 and March 22, 2002, and include violations related to specific SWMUs, as well as general Part B Permit non-compliance concerns. Currently, both the 1997 and 2002 orders are open.

FORT CARSON

COMPLIANCE-RELATED CLEANUP PROGRAM

STATUS: Fort Carson RCRA is regulated via RCRA Part B Permit (effective October 29, 1995 and expires in 2005 #CO2210020150). As of the date of this IAP, Fort Carson is currently renewing the RCRA Part B Permit.

AEDB-CC SITES/SITES RC: 33/0

AEDB-CC SITE TYPES:

4 Landfills	1 Industrial Wastewater Treatment Plant (Active)
1 Sewage Treatment Plant (Active)	1 Sewage Treatment Lagoons (Active)
1 Former Open Dumping Area	1 Equalization Basin (Active)
2 Battery Neutralization Shops	1 Golf Course Holding Pond
1 Golf Course Sludge Spreading Area	2 Former UST Sites
1 Washrack	1 Open Burn area
1 Open Detonation area	1 Hazardous waste storage area
1 Satellite Accumulation area	1 Sewer System
12 OPS UST Sites	

CONTAMINANTS OF CONCERN: Organics (solvents, petroleum hydrocarbons, etc.), Explosives (TNT, RDX, etc.), In-organics (metals, nitrates, etc.)

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment, Indoor Air

IDENTIFIED POSSIBLE REM/IRA/RA: CMI(C) at SWMUs 1,11, 23, 169, 170,

TOTAL CC FUNDING:

PRIOR YEARS EPR Funding:	\$ 9,757,574
CURRENT (FY06*):	\$ 3,006,000
FUTURE REQUIREMENTS:	\$ 19,439,000
TOTAL:	\$ 32,202,574

* This figure is what has been requested and in no way reflects the actual amount received.

DURATION OF CC:

YEAR OF IRP INCEPTION:	2006
YEAR OF RA COMPLETION:	2020
YEAR OF IRP COMPLETION:	2034

CC Contamination Assessment

Fort Carson's principal industrial operation has been the repair and maintenance of vehicles, aircraft, and equipment. Approximately twenty maintenance facilities (motor pools) have been constructed throughout Fort Carson, including the Consolidated Maintenance Facility at Building 8000, which performs specialized repair of tactical and heavy construction and engineering equipment and vehicles. In addition, since the 1960s, more than 300 underground and above ground storage tanks have been installed throughout Fort Carson to store a variety of fuels (gasoline, JP-4, JP-8, kerosene, diesel), and used/waste oils. To date, over 150 individual USTs have been removed and 36 have been upgraded to comply with 1998 state and EPA standards. Investigations of these facilities in July 1992 detected low levels of PCE, TCE, TCA, heavy metals, petroleum hydrocarbons, and several other substances in the soil and groundwater at some sites. Results of the investigations prompted the implementation of an installation-wide groundwater-monitoring program.

In May 1994, the EPA completed a RCRA facility assessment (RFA) of Fort Carson. The CDPHE augmented the RFA in September 1994, and in October 1995, based on sites identified in the RFA, issued Fort Carson a RCRA Hazardous Waste Part B Permit designating the Solid Waste Management Units (SWMUs) listed in this IAP. The FTC numbers also listed in this IAP were designated in the U.S. Army Environmental Hygiene Agency (USAEHA) *Interim Final Report, Hazardous Waste Consultation No. 37-26-0185-89, Evaluation of Solid Waste Management Units, Fort Carson, Colorado Springs, Colorado* (1988).

The RCRA Part B Permit identifies several potential landfill sites that were primarily used for sanitary and construction debris, OB/OD units, a fire training area, battery acid neutralization shops, several vehicle wash rack drainage areas, and several additional areas listed in the respective site description sections. The most widespread contaminants of concern are petroleum related contaminants (POL), metals, inorganics, and volatile organic compounds (VOCs) including, but not limited to, BTEX, TCE, PCE, TCA, and DCE. Limited amounts of contamination other than POL and solvents have been discovered to date. Several sites have been found to have groundwater contamination above regulatory limits. Based on the results of the ongoing groundwater-monitoring program, there are no known hazardous constituents migrating off the installation.

The current AEDB-CC database for the Fort Carson installation contains information on 33 sites. More detailed information about each of the sites is presented in the respective site description sections.

CC Contamination Assessment

In accordance with the Part B Permit requirements, known or suspected constituents of concern identified for each SWMU in the permit were and are currently being addressed. Contaminants of concern identified above regulatory or risk-based screening criteria during the RFI process are listed in the “STATUS” box for each SWMU. In cases where no RFI has been performed at the SWMU (i.e., active facilities), the contaminants listed in the “STATUS” box reflect the suspected constituents of concern listed in the Part B Permit.

CLEANUP STRATEGY TO DATE:

Status of RFI phase--

Sites RFI fieldwork completed at: 12

RFI Work Plans--

Awaiting Implementation: 0

In Preparation: 0

To be Prepared: 6

RFI Reports:

Approved: 9

In Preparation: 3

To be Prepared: 9

Status of CMS phase--

CMSs imposed: 3

All work plan preparation for these sites will be initiated in late FY05.

Sites awaiting NFA petition and risk assessment: 4

These sites will begin the risk assessment process upon approval of all Risk Modules, which is anticipated in late FY05.

Sites that have achieved NFA pending formal permit modification: 1

Our Strategy is a mixture of using available funding to address Fort Carson Corrective Actions as outlined in the permit.

FORT CARSON COMPLIANCE-RELATED CLEANUP PROGRAM

SITE DESCRIPTIONS

CC SW001 (SWMU 1) INACTIVE LANDFILL 1 (1978—2002)

SITE DESCRIPTION

Inactive Landfill 1 (FTC-005), herewith in referred as Landfill 1, is located south of the Cantonment Area. The municipal portion of the landfill is ~50 acres and has been inactive since 1998. Fort Carson also maintained a 12-acre construction debris area (FTC-099) within the Landfill 1 Certificate of Designation boundary until 2002. Landfill 1, which was a trench operation, accepted mixed sanitary waste, waste oil, sludge and construction debris starting in 1978. Starting in 1998, Landfill 1 no longer accepted municipal wastes. Land farming of POL impacted soil was also conducted and ceased in 2002. This site is part of the 2002 Compliance Order, No. 02-03-22-01.

Groundwater sample results indicated inorganics in both upgradient and downgradient wells, at concentrations above CGWS, and chlorinated VOCs in several downgradient wells.

A surface water channel was constructed in 1999 to control drainage in preparation for capping of the municipal portion.

Landfill 1 has been designated as part of the Combined Landfill Area (CLA). The CLA SWMUs include: Landfill 1 (FTC-005, SWMU1), Landfill 7 (FTC-011, SWMU 7), Grit/Oil Pit (FTC-020, SWMU 013), Pete's Hill Dump (FTC-026, SWMU 014), Sludge Trench Pit (FTC-079, SWMU 018), and the Construction and Demolition Debris Landfill (FTC-099/SWMU 170).

Interim Closure Plan for CLA, which identified both solid waste and hazardous waste interim closure requirements, was approved by CDPHE in Sep 03.

Completed RFI activities and started Interim Closure Plan compliance monitoring.

Submitted RFI Report in June 2004 as part of the CLA RFI. The RFI Report was approved in August 2004 and a CMS was imposed by CDPHE.

CLEANUP STRATEGY

Perform CMS (funded with prior year funds) and implement selected remedy.

Continue quarterly groundwater monitoring, soil gas, and engineering controls inspections for CLA as part of the Interim Closure Plan.

STATUS

OMA

EPR#: FTC096S054

RRSE: Low

Regulatory Driver: RCRA-C

COCs: VOC's, Inorganics

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	199511	.....200510
DES.....	200510	.....200609
CMI(C).....	200610	.....200810
LTM.....	200910	.....203610
RC: 200810		

CC SW006 (SWMU 6) LANDFILL 6 (1942-1946)

SITE DESCRIPTION

Landfill 6 (FTC-010) was an abandoned landfill located at the west side of the Cantonment Area near installation housing. This 13.6-acre landfill was operated from 1942 to 1946 as a trench-type landfill. Prior to removal, the specific nature of the landfill activities were unknown, but consisted of construction debris, mixed sanitary waste, sludge, medical waste, municipal waste and waste POL, based on observations during removal. Landfill 6 was excavated in 2000. However, 40 cubic yards of landfill debris was left under the existing water main, due to concerns regarding the piping age and material (30 year old material containing asbestos).

TCE, PCE and vinyl chloride were detected in groundwater before the debris was removed. These detections were above CGWS at the center of the landfill, but not in the landfill perimeter wells.

The RFI Report was approved in May 2000 and the Final Certification Report for waste relocation was approved in April 2004. The Waste Relocation Construction Completion Report was submitted to CDPHE in May 2004.

CLEANUP STRATEGY

Submit Remedy Completion Report to include risk evaluation of waste in place and future plans for groundwater monitoring.

STATUS

OMA

EPR#: FTC099F010

RRSE: High

Regulatory Driver: RCRA-C

COCs: VOCs, SVOC's, Pesticides,
Herbicides, Metals

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	199511	.....200005
CMI(C).....	200005	.....200009
LTM.....	200010	.....200810

RC: 200710

CC SW011 (SWMU 011)

LANDFILL 11 (UNKNOWN TIME OF OPERATION)

SITE DESCRIPTION

Landfill 11, (FTC-015), an abandoned landfill, 2.7 acres in size, is located in the vicinity of Clover Ditch near Gate 20 in the eastern boundary of the installation and upgradient of a domestic water supply. The specific nature of landfill activities at this site is unknown. The RFA indicates that incinerator ash was disposed of here. However, the RFI trenching activities found only construction debris.

Samples collected downgradient of this site at the Installation boundary did not detect metals in the groundwater at concentrations above groundwater standards.

The RFI (2001) samples detected low (below action) levels of 1,1,1-TCA in upgradient groundwater. However, upgradient SWMUs are determined to be the sources to groundwater.

The RFI Report was approved by CDPHE in March 2004 and no CMS was imposed.

STATUS

OMA

EPR#: FTC001F003

RRSE: Low

Regulatory Driver: RCRA-C

COCs: Metals

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	199511	200403
DES.....	200510.....	200604
CMI(C)	200604	200809
LTM.....	200810	201309

CLEANUP STRATEGY

A cover evaluation will be conducted in FY06.

A presumptive remedy selection, including risk evaluation will be developed for the site.

Perform long-term management (minor maintenance of the cover and five years groundwater monitoring).

CC SW021 (SWMU 21) INDUSTRIAL WASTE TREATMENT FACILITY (ACTIVE)

SITE DESCRIPTION

The Industrial Wastewater Treatment Plant (FTC-031), which has been in operation since 1981, consists of two asphalt-lined, sedimentation lagoons (FTC-059), with oil skimmers and two aeration lagoons. This facility operates under an EPA permit (NPDES permit CO-0021181, EPA Region VIII).

This facility provides treatment of oily wastewater and the recycling of used/waste oil from vehicular maintenance facilities. Wastewater from the wash racks and maintenance areas flow to the free oil separator where oil is removed. Effluent flows to the aeration lagoons where further treatment occurs, then to the sewage treatment plant. The basins are periodically drained, after a sufficient amount of solids have accumulated. Dried sludge was disposed of in the land farming area prior to closure of Landfill 1.

In 1998, the free oil water separator (FOS) at Building 3709 was upgraded to include a vortex grit separator.

In 2000, FTC-059, Industrial Wastewater Treatment Plant Ponds, was combined with this site in the AEDB-R program.

1,1,1-TCA has been detected significantly below CGWS during the Landfill 11 RFI (with an upgradient source) and the upgradient limit was estimated to be near the Industrial Wastewater Treatment Plant.

CLEANUP STRATEGY

Perform baseline RFI and submit an RFI report for this active facility.

Document that current procedures at the Industrial Wastewater Treatment Plant are adequate to be regulated fully under NPDES permit.

Perform a risk assessment to identify if Interim Measures are required.

This site will be closed when the facility operations are terminated.

STATUS

OMA

EPR#: FTC096S059

RRSE: NE

Regulatory Driver: RCRA-C

COCs: SVOC's, VOC's,

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	200510	.....200610
LTM.....	200610	.....200709

RC: 200610

CC SW022 (SWMU 22)

SEWAGE TREATMENT PLANT (ACTIVE)

SITE DESCRIPTION

The Sewage Treatment Plant (FTC-042) is located at the southeast corner of the Cantonment Area at Fort Carson. This tertiary treatment facility was built in the 1940s and portions of the original treatment plant were deactivated in December 1998 when upgrades (new process units) for the Sewage Treatment Plant were activated. When the old units were demolished, soil samples were collected from below the trickling filters, primary clarifiers, secondary clarifiers and anaerobic digesters. These units were backfilled with concrete debris and a soil cover after soil sampling. A portion of the treated effluent is discharged from the Sewage Treatment Plant to the Golf Course Effluent Holding Pond (FTC-036/SWMU 32).

There is no evidence of past releases to the environment, and waste management activities are conducted in accordance with NPDES regulations.

The Process Unit Demolition Report summarizes the sampling conducted during the demolition activities (data to be incorporated into RFI report).

STATUS

OMA

EPR#: FTC002F005

RRSE: NE

Regulatory Driver: RCRA-C

COCs: SVOC's, VOC's, Metals

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water, Sludge

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	200410	200610
LTM.....	200610	200709

RC: 200610

CLEANUP STRATEGY

Perform baseline RFI and submit an RFI for this active facility.

Document that current procedures at the Sewage Treatment Plant are adequate to be regulated fully under NPDES permit.

Perform a risk evaluation.

This site will be closed when the facility operations are terminated.

CC SW023 (SWMU 23)

SEWAGE TREATMENT LAGOONS, BAAF

SITE DESCRIPTION

This site (FTC-039) consisted of two evaporation lagoons, each ~2 acres in size, where wastewater from Butts AAF was discharged. In addition, water and fire retardant chemicals used in fire training exercises were discharged to the lagoons periodically when the fire training area oil/water separator was allowed to flow. The facility was operated from the 1960s until 1997, when a sewer line was installed to the Cantonment Area.

PCE has been detected above groundwater standards in several wells on the west side of the site, and low levels of metals were encountered in the sludge within the lagoons. DPW removed the sludge from the lagoons in 1999 and backfilled the site. Additional soil and groundwater samples were collected beneath the former lagoons in 2000, but PCE was not detected in these samples.

In 2001, 2002, and 2003, additional soil and groundwater samples were collected at the site to address CDPHE comments on RFI activities.

Sewage Treatment Lagoons (FTC-039, SWMU 23) and the Fire Training Area (FTC-021/022, SWMU 24) are collectively being investigated as the Butts East Combined sites.

CDPHE approved the revised RFI Report in April 2005, as part of the BECS RFI.

CLEANUP STRATEGY

Perform CMS (funded with prior year funds) and implement selected remedy.

Continue to monitor groundwater and evaluate the need for future actions.

STATUS

OMA

EPR#: FTC096S053

RRSE: NE

Regulatory Driver: RCRA-C

COCs: VOC's,

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	199511	200510
DES.....	200510.....	200604
CMI(C).....	200604	200809
CMI(O)	200610	200809
LTM.....	200810	201309

RC: 200809

CC SW025 (SWMU 25)

OPEN DUMPING AREA, RANGE 121

SITE DESCRIPTION

Range 121 (FTC-040) received ash from open burning of bomb dummy units (BDUs) at Range 123, vehicle targets and various other range scrap was deposited in and near the edge of Young Hollow drainage over less than 1 acre of land. The dates of these activities are unknown.

Investigations at the site were initiated in 1994 as part of the Group B sites (Range 1A, Range 121, Range 123 and Demolition Area) and reported in the Draft Final RFI Report for Group B Sites in September 1999. Soil samples detected inorganics at concentrations above assessment criteria. No groundwater was sampled in this area.

Additional field activities were conducted in 2001 to remove surficial debris and collect surface soil samples.

Results of soil sampling detected inorganics at concentrations above interim background levels and explosives. A large amount of metal debris (consisting of spent casings) was shipped off-site by Fort Carson for recycling.

Fort Carson Range Control implemented erosion control measures in and around Young Hollow drainage in 2002.

Two downgradient wells were sampled on a quarterly basis between October 2003 and July 2004 (4 quarters). To date, no explosive compounds or elevated nitrate concentrations (above the CGWS) have been detected. Based on the analytical data, CDPHE requested that the quarterly event be reduced to annual in November 2004.

CLEANUP STRATEGY

RFI activities are suspended until site is no longer an active range. In the interim, two downgradient wells will continue to be sampled annually to monitor for potential off-site migration of explosives and nitrates until the site becomes inactive. Funding for the monitoring activities is funded under FTC-019/SWMU 47 (Open Detonation Area).

This site will be closed in accordance with interim status unit requirements. The RCRA closure process will adequately cover RFI activities.

STATUS

OMA

EPR#: FTC001F004

RRSE: Low

Regulatory Driver: RCRA-C

COCs: Metals, Explosives

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	TBD	TBD
LTM.....	FY 15+	TBD

RC: TBD

CC SW026 (SWMU 26) EQUALIZATION BASIN 1399

SITE DESCRIPTION

The Equalization Basin (FTC-073) was a surface impoundment used to collect industrial wastewater from the Building 8000 maintenance area. The Equalization Basin is an asphalt-lined basin (bottom area of ~90 x 90 feet, top area of 285 x 190 feet, and 12 feet deep) and is underlain by 3 feet of clay. In accordance with the 1997 Order on Consent, a free-oil separator (FOS) was installed at Building 1395 in May 1998. Reactive sulfide sludge was removed from the basin in May 1998, and the asphalt liner was decontaminated. Soil and groundwater samples were collected from below the liner and primarily show the presence of POL and metals in soil and VOCs in groundwater.

Wells in the vicinity of the Equalization Basin were included in the former Quarterly Groundwater Monitoring Program. Samples from these wells contain low levels of TCE and inorganics (nitrate and selenium) above CGWS. The concentrations are higher in the upgradient wells than the down gradient wells.

The RFI was approved by CDPHE in 1999. Annual groundwater reports have been submitted per the 1997 Order of Consent. A request to cease groundwater-monitoring activities and prepare a No Further Action Request, based on historical analytical data, for this site was submitted in June 2004 and approved by CDPHE in August 2004.

CLEANUP STRATEGY

Perform a risk evaluation.

NFA is expected in FY06.

STATUS

OMA

EPR#: FTC096S047

RRSE: NE

Regulatory Driver: RCRA-C

COCs: SVOC's, VOC's, Metals

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	199511	199909
LTM	199910	200609

RC: 199909

CC SW028 (SWMU 28)

BATTERY NEUTRALIZATION SHOP, BLDG 8000

SITE DESCRIPTION

A total of three Battery Shops (FTC-045B) exist as SWMUs at Fort Carson: SWMU 28/FTC-045B – Building 8000, SWMU 29/FTC-045A – Building 8030, and SWMU 30/FTC-045C – Building 8142. The shop at Building 8000 (SWMU 28) is the only Battery Acid Neutralization Shop currently operating at Fort Carson and is being addressed under OMA. Electrolytes from batteries were discharged into a floor drain. The drain leads to a holding/neutralization tank where the electrolyte was neutralized with sodium bicarbonate before being discharged to the sewer system. Precipitated metals and undissolved sodium bicarbonate are containerized and delivered to DRMO. In 1993, discharge of the battery electrolytes to the floor drains was discontinued. Present operations include storage and charging of batteries.

One soil sample was taken when a line was repaired containing lead above the TCLP regulatory levels (CDPHE RCRA Facility Assessment 1995). The soil samples collected in 1999 contained inorganics above background but below regulatory levels. Chlorinated VOCs were detected at concentrations above groundwater standards in one well, but are not related to this site.

In 2001, the RFI report (for all three SWMUs) was submitted to CDPHE (Earth Tech 2001) and was approved in 2002.

The RFI report (for all three SWMUs) was submitted to CDPHE in 2001 and approved in 2002. No CMS imposed.

CLEANUP STRATEGY

Perform a risk evaluation (for soil only since groundwater was not encountered at this site) with NFA request.

STATUS

OMA

EPR#: FTC002F006

RRSE: Low

Regulatory Driver: RCRA-C

COCs: Metals

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	199511	.....200209
LTM	200410	.....200609

RC: 200209

CC SW032 (SWMU 32) GOLF COURSE HOLDING POND

SITE DESCRIPTION

This pond, (FTC-036) which doubles as a water hazard between the sixth and eighth fairways on the golf course, is a holding area for treated effluent from the Sewage Treatment Plant (FTC-042), and permitted as an outfall under NPDES permit # CO-0021181, EPA Region VIII. Fort Carson uses the effluent for irrigation and as a reserve for fire fighting at the clubhouse. The pond has been in operation since 1972.

Wells in the vicinity of the golf course were included in the former Quarterly Groundwater Monitoring program. Samples from these wells contain low levels of metals.

Prepared Draft RFI Report based on existing effluent from the Sewage Treatment Plant and groundwater data. Prior to submittal, CDPHE verbally requested that sediment samples from the holding pond be collected. RFI Work Plan was submitted and approved by CDPHE in December 2004. The pond was drained to increase holding capacity in December 2004. Sediment samples were collected following the draining of the pond and the results indicated below screening levels. RFI Report will be submitted in May 2005.

STATUS

OMA

EPR#:

RRSE: Low

Regulatory Driver: RCRA-C

COCs: Metals

MEDIA OF CONCERN:

Soil, Surface Water

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	199511	.....200509
LTM	200510	.....200609

RC: 200509

CLEANUP STRATEGY

Perform risk evaluation with NFA Request.

CC SW033 (SWMU 33)

GOLF COURSE SEWAGE TREATMENT PLANT EFFLUENT & SLUDGE SPREADING AREA

SITE DESCRIPTION

During the construction of the course in 1972, sludge from the Sewage Treatment Plant (FTC-034) were mixed with soils to construct the fairways and greens. Effluent from the Wastewater Treatment Plant (SWMU 22, FTC-042) is pumped through a permanent line to the golf course holding pond (SWMU 32/FTC-036), where it is used to irrigate the 200-acre course. This practice has been approved in the NPDES Permit #CO-0021181, EPA Region VIII).

Wells in the vicinity of the golf course have been included in the Quarterly Groundwater Monitoring Program. Samples from these wells contain low levels of metals.

Prepared Draft RFI Report based on existing effluent data from the Sewage Treatment Plant, historical sludge data and groundwater data. Prior to submittal, CDPHE verbally requested that shallow soil samples from the Sludge Spreading Area be collected. The RFI Work Plan was submitted and approved by CDPHE in December 2004. Soil samples were collected from each fairway in January 2005 which showed results being below screening levels.

STATUS

OMA

EPR#: FTC002F004

RRSE: NE

Regulatory Driver: RCRA-C

COCs: Metals

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	199511	200510
LTM.....	200510	200609

RC: 200510

CLEANUP STRATEGY

Submit RFI Report in June 2005.

Perform risk evaluation with NFA Request.

CC SW035 (SWMU 35) NEW CENTRAL WASH RACK

SITE DESCRIPTION

The New Central Wash Rack (FTC-074) is located in the southeast corner of the Cantonment Area. It was constructed in 1989 and has been operating since then. Pressurized water removes exterior dirt in the “Bird Bath” units, and the wash water is collected in two sedimentation basins where soil and debris are allowed to settle out. The site is self-contained and the water is recycled back into the operation. Dried sediment is tested and disposed off-site. There is no evidence of a release to the environment.

The completion of investigation activities at this site is a Supplemental Environmental Program (SEP) from the 1997 Order on Consent.

In 2001, a No Further Action Request was submitted to CDPHE. CDPHE was concerned about potential release of phthalates from light sticks discovered in the sedimentation basins. In 2002, two sediment samples were collected and analyzed for SVOCs to address CDPHE comments. The analytical results for these samples contained no detections that exceeded Fort Carson screening criteria.

CLEANUP STRATEGY

Perform baseline RFI and submit RFI for this active facility.

Document that current procedures are adequate in closed system.

Perform risk evaluation.

STATUS

OMA

EPR#: FTC002F007

RRSE: NE

Regulatory Driver: RCRA-C

COCs: Metals, POL

MEDIA OF CONCERN:

Soil, Surface Water, Groundwater

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	200206	.....200609
LTM.....	200610	.....200709

RC: 200610

CC SW047 (SWMU 47)

RANGE 121, OPEN DETONATION GROUNDS

SITE DESCRIPTION

The Open Detonation Area (FTC-019) is a ~4-acre site and has been operational since 1963 as the Open Detonation Facility for 764th Ordnance Company. Ordnance including CS (riot control agent) grenades, white phosphorous (WP) in projectile rounds, pyrotechnics, flares, and smokes are destroyed at this range.

Investigations at the site were initiated in 1994 as part of the Group B sites (Range 1A, Range 121, Range 123 and Demolition Area) and reported in the Draft Final RFI Report for Group B Sites in September 1999. Results of soil and groundwater sampling detected inorganics at concentrations above interim background levels. Isolated concentrations of explosives were detected in soil and groundwater.

Two downgradient wells were sampled on a quarterly basis between October 2003 and July 2004 (4 quarters). To date, no explosive compounds or elevated nitrate concentrations (above the CGWS) have been detected. Based on the analytical data, CDPHE requested that the quarterly event be reduced to annual in November 2004.

CLEANUP STRATEGY

RFI activities are suspended until site is no longer an active range. In the interim, two downgradient wells will continue to be sampled annually to monitor for potential off-site migration of explosives and nitrates until the site becomes inactive. This site will be closed in accordance with interim status unit requirements.

The RCRA closure process will adequately cover RFI activities.

STATUS

OMA

EPR#: FTC001F004

RRSE: High

Regulatory Driver: RCRA-C

COCs: Metals, Explosives

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	199511	203510
LTM.....	203510	203610

RC: 203510

CC SW048 (SWMU 48)

RANGE 123, OPEN BURN GROUNDS

SITE DESCRIPTION

This site was a RCRA Interim Status Unit (FTC-027) used to burn practice bombs containing white phosphorous. The site consisted of a burn pit as well as a crated scrap area that was reportedly used to store material removed from the burn pit for subsequent handling and disposal. The pit has been documented as either two trenches or one large trench. Reported burning activities included either placing the practice bombs into trenches and using diesel fuel and dunnage to initiate the burns, or placing a 4-foot layer of wood in the bottom of the hole, covering it with practice bombs, and initiating the burn with 50 gallons of diesel fuel. Ash and residue from the trenches was transferred to Range 121 (FTC-040). Investigations at the site were initiated in 1994 as part of the Group B sites (Range 1A, Range 121, Range 123 and Demolition Area) and reported in the Draft Final RFI Report for Group B Sites in September 1999. No groundwater was encountered for sampling.

Test pits in 2001 encountered general construction debris, including Styrofoam, plastic, foil, scrap metal, concrete and wire mesh, as well as Mark 106 and 76 practice bombs.

A separate RFI Report for this SWMU summarizing all RFI activities between 1994 and 2001 was submitted to CDPHE in October 2003 and approved in December 2003. Although no additional soil or groundwater characterization or remediation was required at the site, the CDPHE requested the removal of the known BDUs, practice bombs and ordnance scrap in the former burn pits as an IRA. A work plan was submitted and approved in July 2004 and the IRA was completed in October 2004. Approximately 300 cubic yards of soil were excavated and 500-600 BDU practice bombs, one 500-pound bomb and numerous practice bomb fragments and other pieces of metallic debris were removed. Based on the removal effort, it was determined that the BDUs were likely burned and buried in two trenches rather than one large pit. A summary of the IRA was submitted to CDPHE and accepted in December 2004. A NFA Request was submitted to the CDPHE and approved in April 2005.

CLEANUP STRATEGY

The Part B Permit will be modified to indicate remedy complete, NFA in 2005.

STATUS

OMA

EPR#: FRC003F003

RRSE: NE

Regulatory Driver: RCRA-C

COCs: Metals

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	199511	.....200309
CMI(C).....	200310	.....200409
LTM.....	200410	.....200609

RC: 200409

CC SW049 (SWMU 49) HAZARDOUS WASTE & PCB STORAGE FACILITY, BLDG 9248

SITE DESCRIPTION

The Hazardous Waste and PCB Storage Facility, Building 9248 (SWMU 49), is Fort Carson's permitted Hazardous Waste Storage Facility. This site is a 60 x 30 foot bunker, secured, and meets all the requirements for RCRA storage. An annual inspection of this facility is conducted by the state of Colorado. This site is subject to RCRA Closure. There is no evidence of past releases to the environment, and waste management activities are conducted in accordance with hazardous waste management regulations.

CLEANUP STRATEGY

Prepare a closure plan in accordance with RCRA post-closure/closure requirements for permitted storage facilities.

RCRA closure activities will adequately cover RFI.

An RFI/CMS will be performed that will include the installation of groundwater monitoring wells and quarterly groundwater monitoring.

STATUS

OMA

EPR#: FTC099F020

RRSE: NE

Regulatory Driver: RCRA-C

COCs: All hazardous waste are listed in the RCRA Part B Permit

MEDIA OF CONCERN:

Soil, Surface Water

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	200510	.....203510
LTM.....	203510	.....203610

RC: 203510

CC SW052 (SWMU 52)

HAPPY HOLLOW 90-DAY HAZARDOUS WASTE STORAGE CONSOLIDATION AREA

SITE DESCRIPTION

This site is also known as the Happy Hollow 90-Day Hazardous Waste Storage Area (SWMU 52) in the Part B Permit. The Happy Hollow 90-Day Hazardous Waste Storage Consolidation Area (FTC-080) is Fort Carson's 90-day storage area identified in the RFA (SAIC 1994). This site was not a permitted storage facility. The RFA indicated possible releases to the environment.

CLEANUP STRATEGY

Prepare an RFI Work Plan and perform RFI investigation, when facility is no longer operating.

RFI activities will likely coincide with SWMU-49 closure/post-closure activities.

STATUS

OMA

EPR#: FTC002F002

RRSE: NE

Regulatory Driver: RCRA-C

COCs: All hazardous waste are listed in the RCRA Part B Permit

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	203410	203510
LTM	203510	203610

RC: 203510

CC SW163

FORT CARSON SEWER SYSTEM

SITE DESCRIPTION

This site consists of all the pipes associated with the Industrial Wastewater Treatment System (FTC-076) that transmit industrial wastewater to the Industrial Wastewater Treatment Facility (FTC-031/SWMU 21). New mains were installed in 1980 and existing lines dating back to 1950 were tied into the system. In 1997, ~5 miles of piping were video surveyed. Based on this survey, ~30 locations have been identified as potential release points due to structural damage to the lines. In 2002, additional line surveying and sampling outside the lines were performed. Results indicate only three potential release points.

The RFI Report was submitted to CDPHE in April 2004.

CLEANUP STRATEGY

Replace/repair industrial lines is being completed by DPW.

Finalize RFI.

Anticipate risk assessment and NFA petition request FY06

STATUS

OMA

EPR#: FTC001F006

RRSE: NE

Regulatory Driver: RCRA-C

COCs: VOC's, SVOC's, Metals

MEDIA OF CONCERN:

Soil

<u>PHASES</u>	<u>Start</u>	<u>End</u>
RFA.....	199410	199510
RFI/CMS.....	199511	200610
LTM	200610	200710

RC: 200610

CC SW165 (SWMU 165) FORMER LIME PIT SITE IN BLDG 8110

SITE DESCRIPTION

This site is located at the Colorado National Guard maintenance facility (FTC-077) at Fort Carson. Prior to 1981, used battery acid generated from vehicle maintenance operations was neutralized in a lime pit located in a battery room attached to Building 8110 and was then discharged to the IWTP. This practice was discontinued in 1986. The construction and dimension of the lime pit is unknown; however, the pit is fully enclosed. Wastewater from a nearby sink still discharges through the pit en route to the IWTP.

Low concentrations of petroleum-related compounds were detected in the soil surrounding the battery room; groundwater was not encountered. Following initial subsurface investigations at this site, the CDPHE requested additional soil samples below the lime pit.

STATUS

OMA

EPR#: FTC099F024

RRSE: NE

Regulatory Driver: RCRA-C

COCs: Metals

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	199410	.....199510
RFI/CMS.....	199511	.....200403
IRA.....	200310	.....200311
LTM	200410	.....200610

RC: 200403

Current and future site investigations will be performed and funded by the Colorado Army National Guard. Therefore, it is assumed that Fort Carson will only be responsible for funding the risk assessment required to close the site in the Part B Permit.

RFI submitted and approved in March 2004 (CMS not imposed).

CLEANUP STRATEGY

Perform a risk evaluation with NFA request FY06.

CC SW166 (SWMU 166)

WASH RACK SITE NORTH OF BLDG 8110

SITE DESCRIPTION

The concrete wash pad, located ~200 feet north of Building 8110, (FTC-078) was operated between 1981 and 1996. Wash water was discharged through two drains in the concrete pad to a sand trap en route to the IWTP.

Subsurface investigations detected elevated levels of petroleum-related compounds in the soil beneath the pad, primarily in the vicinity of the sand trap where free-phase product was encountered. Groundwater was encountered at the site, but limited volume prevented sample collection. Following initial subsurface investigations, the CDPHE requested additional soil samples to further delineate the nature and extent of impacted soils.

Current and future site investigations will be performed and funded by the Colorado Army National Guard.

Therefore, it is assumed that Fort Carson will only be responsible for funding the risk assessment required to close the site in the Part B Permit.

RFI submitted and approved in March 2004 (CMS not imposed).

CLEANUP STRATEGY

Perform a risk evaluation with NFA request.

STATUS

OMA

EPR#: FTC00F021

RRSE: NE

Regulatory Driver: RCRA-C

COCs: POL

MEDIA OF CONCERN:

Soil

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	199511	200403
IRA.....	200310	200311
LTM	200410	200609

RC: 200403

CC SW169 (SWMU 169) FORMER BUILDING 1211

SITE DESCRIPTION

Former Building 1211 (FTC-088) served as a pump house for a fueling station, which according to historical as-builts, consisted of one 12,000 gallon diesel UST, one 12,000 gallon solvent UST, eight diesel fuel dispensing pumps, and one solvent dispensing pump. However, based on real-property documents, it is not known if the USTs originally contained gasoline, which was subsequently replaced with diesel fuel and solvent at a later date, or if the USTs have contained diesel fuel and solvent since installation.

The investigation of former Building 1211 was initiated based on results of an RFI conducted at nearby Landfill 6 (FTC-010/SWMU 6). The Landfill 6 RFI concluded that the origin of organic compounds in the groundwater and petroleum hydrocarbon compounds in soil collected from monitoring well LF6MW8, located crossgradient of the landfill near the location of former Building 1211, may be associated with former fueling station activities.

Four separate investigations were performed between October 1999 and October 2000 to determine whether the former Building 1211 area is the source of constituents detected in monitoring well LF6MW8. Subsurface investigations confirmed that soil and groundwater impacts initially detected in LF6MW8 are associated with the former Building 1211 fueling facility. Consistent concentrations of cis-1,2-dichloroethene and vinyl chloride have been detected in groundwater. Free-phase product (LNAPL) was encountered in the former tank pit.

Based on the results of the investigations, a Newly Identified SWMU Report was submitted to CDPHE in April 2001 with an RFI Work Plan. Additional groundwater wells were installed in January 2003, additional groundwater sampling was conducted in August 2004 and the RFI Report was submitted to CDPHE in January 2005.

CLEANUP STRATEGY

Finalize RFI report (funded with prior year funds).

Perform CMS.

Implement corrective measure (anticipate ORC injection) and perform groundwater monitoring.

STATUS

OMA

EPR#: FTC000F017

RRSE: Low

Regulatory Driver: RCRA-C

COCs: POL, VOC's

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	199910	200609
DES.....	200610	200704
CMI(C).....	200705	200909
LTM.....	200910	201009

RC: 200810

CC SW170 (SWMU 170) CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL

SITE DESCRIPTION

Inactive Landfill 1 Construction Debris Landfill (FTC-099) is located south of the Cantonment Area in the Landfill 1 Certificate of Designation. The landfill received Fort Carson construction debris and other material as a canyon fill operation until 2002. The area of the landfill is estimated at 15 acres, and is located at the toe of Pete's Hill (FTC-026, SWMU 14). This site is part of the 2002 Compliance Order # 02-03-22-01.

The construction and debris landfill has recently been included as Part of the Combined Landfill Area (CLA).

Interim Closure Plan for CLA, which identified both solid waste and hazardous waste interim closure requirements, was approved by CDPHE in Sep 03.

Completed RFI activities and started Interim Closure Plan compliance monitoring.

Submitted the CLA RFI Report in June 2004 and approved by CDPHE in August 2004. A CMS was imposed.

CLEANUP STRATEGY

Perform CMS (funded with prior year funds) and implement selected remedy.

Continue quarterly groundwater monitoring, soil gas, and engineering controls inspections for CLA as part of the Interim Closure Plan.

STATUS

OMA

EPR#: FTC002S001

RRSE: NE

Regulatory Driver: RCRA-C

COCs: VOC's

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
RFA.....	199410	199510
RFI/CMS.....	200203	200510
DES.....	200510	200606
CMI(C).....	200606	200809
LTM.....	200810	203610

RC: 200710

CC-063

UST AT BUILDING 2492

SITE DESCRIPTION

Building 2492 (FTC-063) is an active motor pool located between Minick and Magrath Avenues in the southeastern portion of the Cantonment Area at Fort Carson. Three 20,000-gallon USTs were installed in 1966 and removed in 1993. The USTs dispensed diesel fuel through six retail dispensers.

A leak was detected during a site investigation in 1992. The USTs were removed and thirteen permanent groundwater monitoring wells were installed from 1994 through 2002.

A Corrective Action Plan (CAP) was submitted in March, 2004, proposing monitored natural attenuation (MNA). The CAP was approved in August 2004, and as a condition of the approval.

STATUS

OMA

EPR#:

RRSE: NE

Regulatory Driver:

COCs: Petroleum Hydrocarbons

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
ISC.....	199410	199510
INV	199511	200510
LTM	200510	200610

RC: 200710

CLEANUP STRATEGY

DECAM is currently performing quarterly groundwater monitoring on six wells at the site. Upon OPS concurrence, DECAM will pursue OPS site closure through an NFA request in FY06. If NFA not approved, future monitoring will be required.

CC-066

UST AT BUILDING 3192

SITE DESCRIPTION

Building 3192 (FTC-066/Event ID No. 7658) is located in the eastern portion of the Cantonment Area at Fort Carson. This motor pool formerly contained three steel 20,000-gallon USTs from which diesel fuel was dispensed through six remote dispenser islands. The USTs and associated dispenser islands were removed from the site in August and October 1994. Several investigations have been performed to define the extent of subsurface impacts, including the installation of 27 boreholes, 6 direct push points, and 15 groundwater-monitoring wells.

Currently, eight of 10 groundwater wells at the Building 3192 site are sampled on a quarterly basis for BTEX, MTBE, and TEPH. The analytical data suggest impacted groundwater surrounding 3192MW09, which has routinely displayed benzene detections ranging from 10 to 29 micrograms per liter (µg/L) since April 2000. This impact appears to occur upgradient of the former UST area. A possible secondary source is the recently upgraded wash rack area north-northwest of the former UST area.

STATUS

OMA

EPR#:

Regulatory Driver:

COCs: VOC's, Inorganics

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
ISC.....	199410	.....199510
INV	199511	.....200510
LTM	200510	.....200610

RC: 200710

CLEANUP STRATEGY

DECAM is currently performing quarterly groundwater monitoring on six wells at the site. Upon OPS concurrence, DECAM will pursue OPS site closure through an NFA request in FY06. If NFA not approved, future monitoring will be required.

CC-067

UST AT BUILDING 8200

SITE DESCRIPTION

Building 8200 (FTC-067/EID 5011) is located in the northeastern portion of the Cantonment Area at Fort Carson. This motor pool formerly contained four steel 20,000-gallon USTs. The three westernmost tanks stored diesel fuel, and the easternmost tank stored gasoline. Fuel was dispensed from the tanks through four remote dispenser islands and one bulk fuel dispenser island. The USTs and dispenser islands were removed from the site in November 1996, during which time petroleum-contaminated soil was encountered in the tank excavation area. Confirmation soil samples were collected within the resulting tank and dispenser island excavations and analyzed for BTEX, TVPH and TEPH. TVPH levels of up to 1,700 milligrams per kilogram (mg/kg) and TEPH levels of up to 9,900 mg/kg were detected in these soil samples.

STATUS

OMA

EPR#:

Regulatory Driver:

COCs: VOC's, Inorganics

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
ISC.....	199410	.....199510
INV	199511	.....200510
LTM	200510	.....200610

RC: 200710

However, over excavation could not be performed due to the close proximity of existing buildings and utilities. As a result, several investigations have been performed to define and reduce the extent of subsurface impacts, including installation of an expanded-scale bio-venting system. In March 2005, additional subsurface investigation was conducted and results are pending.

Currently, nine groundwater wells at the Building 8200 site are sampled on a quarterly basis for BTEX, MTBE, and TEPH.

CLEANUP STRATEGY

DECAM is currently performing quarterly groundwater monitoring on nine wells at the site. CAP modification or Tier 1A model will be required pending OPS review of soil analytical data.

CC-084

UST AT BUILDING 1515

SITE DESCRIPTION

Building 1515 (FTC-084/EID 7468) is an active AAFES retail fuel station on the corner of Chiles Avenue and Prussman Boulevard, in the south-central portion of the Cantonment Area at Fort Carson. In April 1987, three 10,000-gallon USTs were replaced with new USTs within the same excavation. UST installation records and dates were not available for the generation of this document.

In October and November 1998, evidence of a substantial and prolonged loss of fuel product was discovered during upgrades of the product lines and installation of leak detection at the tank system. A preliminary subsurface investigation performed by Earth Tech in 1999, indicated the potential for groundwater contamination at the site. Additional subsurface work included subsurface investigations, groundwater monitoring, installation of a soil vapor extraction system and ORC injection. As subsurface contamination is known to exist beneath Building 1515, each corrective action is followed by contaminant rebound as the hydrocarbon impact migrates with groundwater flow to the southeast. Additionally, groundwater table fluctuations of up to two feet in three months have been noted during quarterly groundwater sampling events. Such variability in static groundwater may also contribute to contaminant rebound as contamination in the vadose zone is released when static groundwater rises.

OMA
EPR#:

STATUS

Regulatory Driver:

COCs: Petroleum Hydrocarbons

MEDIA OF CONCERN:
Soil, Groundwater

PHASES	Start	End
ISC.....	199410	.....199510
INV	199511	.....200510
LTM.....	200510	.....200610

RC: 200710

CLEANUP STRATEGY

Nine groundwater-monitoring wells are currently sampled at this site on a quarterly basis.

DECAM is currently exploring various closure strategies for this site, to possibly include Tier 1A model.

CC-085

UST AT BUILDING 1882

SITE DESCRIPTION

Building 1882 (FTC-085/EID 7486) serves as an active motor pool located in the eastern portion of the Cantonment Area at Fort Carson. The site contains three fiberglass 20,000-gallon USTs from which fuel is dispensed through five remote dispenser islands (#1 through #5) and one bulk fuel island. The two outer tanks (Tanks #1 and #3) store JP-8 fuel, and the center tank (Tank #2) stores gasoline. The fuel supply system at Building 1882 was upgraded in October and November 1998, during which time Tank #1 was punctured. In addition, during the tank upgrades in 1998, impacted soil was identified around dispenser Island #5. The impacted material was excavated and removed. Fort Carson personnel detected a loss of product through daily gauging of Tank #1, and in June 1999 an investigation into the product loss included an excavation around this tank. A puncture in the upper portion of the tank at the northeast end was observed at this time. Corrective actions included repairing the hole and replacing the surface materials. An undetermined amount of product leaked into the subsurface between the upgrade in November 1998 and the repair in June 1999.

Prior to the 1998 upgrade, only one permanent groundwater monitoring well, had been installed at the site (1992). No groundwater analytical data or historical documentation regarding this well could be located indicating any previous impact to the subsurface. Since August 1999, multiple investigations have been performed at the site. None of the existing groundwater monitoring wells is screened completely within the pea gravel of the former excavation surrounding dispenser island #5.

Free-phase liquid fuel product (free product) is known to have existed within the fill materials surrounding the three USTs and within a former excavation area surrounding dispenser island #5, created during the piping leak repair. EFR has been performed on a weekly or monthly basis since February 2000, by using a peristaltic or Keck pump to purge the wells of floating free product. first quarter 2004 groundwater analytical data that indicates detections of MTBE above method detection limits in only the groundwater samples collected from wells surrounding the EFR wells.

CLEANUP STRATEGY

Continue to perform quarterly groundwater monitoring of 15 wells. Additional evaluation will be conducted upon tank removal in Jul 05.

STATUS

OMA

EPR#:

Regulatory Driver:

COCs: VOC's, Inorganics

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

PHASES	Start	End
ISC.....	199410	199510
INV	199511	200510
LTM	200510	200610

RC: 200710

CC-086

UST AT BUILDING 9606

SITE DESCRIPTION

Building 9606 (FTC-086) is a bulk fuel facility located on Son Tay Road at the Butts Army Airfield in the north-central portion of Fort Carson. Two 30,000-gallon USTs and two 20,000-gallon USTs were installed at the site in 1965 to store JP-8 fuel for aircraft fueling operations at the airfield. A 500-gallon UST was also installed to collect fuel filter waste associated with the four fuel tanks.

In May 1999, a leak was identified at the base of one of the 20,000-gallon USTs during a vacuum tightness test. The tank was immediately evacuated and removed from service, but remained in place, as removal would compromise the integrity of the adjacent UST. As part of the ensuing environmental investigation conducted at this site, six permanent monitoring wells were installed around the tank area and soil and groundwater samples were collected at these locations. A No Further Action (NFA) status was granted for this site on March 3, 2000, as analytical results indicated that no hydrocarbon concentrations were detected above the OPS RBSLs.

In February 2001, the empty 20,000-gallon UST was removed and analytical results indicated that all of the three confirmatory soil samples exceeded OPS Tier I RBSLs for total volatile petroleum hydrocarbons (TVPH) and total extractable petroleum hydrocarbons (TEPH). Earth Tech installed one permanent groundwater-monitoring well, at the approximate location of the center of the former tank pit. Analytical results of soil samples obtained during well installation indicated that detected concentrations were below applicable OPS Tier I RBSLs. OPS did not reinstate Building 9606 as an active OPS site. No soil or groundwater monitoring is currently being performed at the site.

The most recent tank integrity test performed on July 15, 2004 indicates that the USTs are intact.

CLEANUP STRATEGY

Work scheduled for 2005 includes UST removal and well abandonment.

STATUS

OMA

EPR#:

Regulatory Driver:

COCs: Petroleum Hydrocarbons

MEDIA OF CONCERN:

Soil

PHASES	Start	End
ISC.....	199410	199510
INV	199511	200510
LTM	200510	200610

RC: 200710

CC-090

UST AT BUILDING 1982

SITE DESCRIPTION

Building 1982 (FTC-090/EID 6026) is an active motor pool located between Minick and Magrath Avenues in the southeastern portion of the Cantonment Area at Fort Carson. Three 20,000-gallon USTs were installed in 1984 and currently dispense JP-8 fuel through six retail dispensers.

A product line release was detected in December 1997 and was quickly repaired. Eight monitoring wells were installed and monitored; with no detections above OPS Tier I Risk-Based Screening Levels (RBSLs). DECAM submitted an SCR in May 2002, in conjunction with a No Further Action (NFA) request. The NFA was approved by OPS in October 2002. The most recent tank integrity test performed on July 21, 2004 indicates that the USTs are intact.

STATUS

OMA

EPR#:

Regulatory Driver:

COCs: Petroleum Hydrocarbons

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
ISC.....	199410	.....199510
INV	199511	.....200510
LTM	200510	.....200610

RC: 200710

CLEANUP STRATEGY

Discontinued.

CC-098

UST AT BUILDING 9628

SITE DESCRIPTION

Building 9628 (FTC-098/EID 8792) is a vehicle maintenance facility located on the south side of Airfield Road at Butts Airfield, Fort Carson. Two 12,000-gallon USTs (JP-8) and one 6,000-gallon UST (gasoline) were installed in 1987 and removed in September 2003. The fuels were dispensed to five retail dispenser islands and one bulk fuel island.

In August 2001 a leak was discovered at the industrial waste water line leading from Building 9629, and while excavating an area to enable the line repair, stained soil was discovered on the northeast side of the excavation, immediately adjacent to the southwestern most UST. TEPH at levels above OPS Tier I RBSLs were detected in a grab soil sample collected from this location.

STATUS

OMA

EPR#:

Regulatory Driver:

COCs: Petroleum Hydrocarbons

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
ISC.....	199410	.....199510
INV	199511	.....200510
LTM	200510	.....200610

RC: 200710

DECAM initiated a subsurface investigation in November 2001 that included the installation of seven permanent monitoring wells around the USTs, associated dispenser islands, and buried product lines to determine if fueling operations impacted surrounding soil and groundwater. During the investigation, two product lines were damaged at a location near the northeastern most dispenser island. The USTs at the site were empty at the time the damage was incurred, and it is assumed that the release included only residual fuel within the two product lines. The lines were immediately repaired, and impacted soil was excavated to a depth of 9.0 feet. An additional three permanent groundwater monitoring wells were installed to delineate the vertical and horizontal extent of soil impacted by the fuel release beyond the excavation and to determine if the fuel release impacted local groundwater conditions.

An SCR was submitted to OPS in April 2002 and a CAP in August 2003, proposing groundwater remediation through MNA.

During removal of the USTs and fuel dispenser islands in September 2003, a soil sample collected near the former product line release indicated TEPH in excess of OPS Tier I RBSLs. DECAM currently performs quarterly groundwater monitoring for ten permanent wells at the site. However, static groundwater levels have decreased to a point that only two wells can be sampled on a regular basis.

CLEANUP STRATEGY

OPS have been notified of this exceedence and recommends that a Tier 1A model be prepared as the most practical and efficient means for site closure. Continue to perform quarterly groundwater monitoring.

CC-101 BUILDING 9609

SITE DESCRIPTION

Building 9609 is a former emergency heating fuel storage facility located on Son Tay Road in the Butts Airfield area. This site formerly contained two 30,000-gallon USTs that stored heating oil and two 15,000-gallon USTs that stored diesel fuel. The heating oil tanks were removed in May 1996, and the diesel tanks were removed in 1998, after which an Initial Site Characterization Report (ISCR) was submitted for each event. OPS disapproved the 1998 report in July 2003, requesting an updated Site Characterization Report (SCR) because confirmation soil sample results indicated TEPH at concentrations up to 9,700 mg/kg but did not include a site figure detailing sample locations.

CLEANUP STRATEGY

Additional Sampling is required to fully delineate the contamination.

STATUS

OMA

EPR#: FTC001F025

Regulatory Driver: RCRA-I

COCs: Heating Oil, Diesel Fuel

MEDIA OF CONCERN:

Soil

PHASES	Start	End
ISC.....	199606	199809
CAP.....	200307	200610

RC: 200610

CC-102

BUILDING 980 AND 981

SITE DESCRIPTION

Building 980 is a former Army Air force Exchange Service (AAFES) gasoline station, located on the north side of O'Connell Boulevard, near the north gate in the Cantonment Area of Fort Carson. The facility operated from 1973 to the early 1990s, dispensing fuel from four 10,000-gallon USTs (three gasoline and one diesel fuel UST). Two of the USTs were installed in 1984 and removed in 1989. The remaining two USTs were installed in 1973 and removed in 1991.

A series of subsurface investigations were initiated in 1989 after the first set of USTs were removed, including groundwater monitoring well installation, soil excavation, soil gas and geophysical surveys, and product recovery trench installation. No additional work has been conducted at this site since 2001. No records could be located indicating that the Colorado Department of Public Health and the Environment (CDPHE), or OPS was notified of the leak. However, in October 2004, Earth Tech and DECAM met with OPS regulators assigned to various UST sites at Fort Carson to discuss the potential for future OPS oversight of this facility. Earth Tech was notified in February 2005 that a leak event ID and a regulator have been assigned to the site. As a small area of soil contamination in excess of Tier I RBSLs exists immediately north of O'Connell Boulevard, a proposal for additional corrective action by Oxygen Release Compound (ORC) injection prepared in March 2002 was submitted to OPS in November 2004. Earth Tech is currently awaiting a regulatory decision from OPS regarding future efforts at this site.

STATUS

OMA

EPR#:

Regulatory Driver: RCRA-I

COCs: Benzene, Diesel Fuel

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
ISC.....	198810	199109
CAP.....	199110	200610

RC: 200610

CLEANUP STRATEGY

OPS have been notified of this exceedence and recommends that a Tier 1A model be prepared as the most practical and efficient means for site closure. Continue to perform quarterly groundwater monitoring.

CC-103

BUILDINGS 1382 AND 1392

SITE DESCRIPTION

Buildings 1382 and 1392 are active motor pools located between Minick and Magrath Avenues in the southeastern portion of the Cantonment Area at Fort Carson. Each site contained three USTs that dispensed diesel fuel through six retail dispensers. USTs at Building 1382 were installed in 1965 and removed in 1990; USTs at Building 1392 were installed in 1965 and removed in 1993.

In September 1989, following a failed tank integrity test at Building 1382, a release was reported to CDPHE, and an extensive subsurface investigation ensued, including removal of the tank system and installation of several groundwater monitoring wells. In early 1992, petroleum hydrocarbon-contaminated soil was encountered during replacement of a water

supply line along Minick Avenue at a location downgradient of Building 1382. As the Building 1392 USTs were operating in close proximity to the contaminated soil, the tank system was removed in 1993. At this time, a decision was made by DECAM to combine the two sites into one investigation, as the contaminant source could not be discerned due to fluctuation groundwater flow direction.

Additional groundwater monitoring wells were installed at Building 1392 in 1994 and at Building 1382 in 2001. Soil and groundwater samples were collected and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), total volatile petroleum hydrocarbons (TVPH) and total volatile petroleum hydrocarbons (TEPH). None of the soil samples indicated hydrocarbon concentrations above OPS Tier I RBSLs, and all groundwater analytical results were below method detection limits. No groundwater samples have been collected at either of the sites since November 2001.

A Site Characterization Report (SCR) was submitted to OPS in April 2003. However, in recent discussions with OPS, it was determined that the agency has no record of receiving the document, nor had OPS release events been created for either of these sites. Earth Tech resubmitted the SCR in November 2004, and OPS has recently taken regulatory ownership of this site. It is assumed that closure will be granted by OPS in 2005.

CLEANUP STRATEGY

OPS have been notified of this exceedence and recommends that a Tier 1A model be prepared as the most practical and efficient means for site closure. Continue to perform quarterly groundwater monitoring.

STATUS

OMA

EPR#:

Regulatory Driver: RCRA-I

COCs: Petroleum Hydrocarbons

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
ISC.....	199202	199309
CAP.....	199310	200610

RC: 200610

CC-104

BUILDINGS 9647 AND 9648

SITE DESCRIPTION

Building 9648 is located on the east side of Butts Road at the Butts Army Airfield at Fort Carson. The building served as a hangar for fueling operations at the airfield. Four 12,000-gal USTs (one each of gasoline, kerosene, JP-4 and diesel fuel) were installed adjacent to Building 9648 in 1941 and 1942. It is estimated that approximately 10,500 gallons of unleaded gasoline had leaked from the gasoline tank, although no documentation is available detailing the leak event or if it was reported to a regulatory agency. The tanks were removed in two separate activities in 1986 and 1990, although removal details are not available at this time. Various corrective actions including soil vapor extraction have been implemented at the site since the USTs have been removed. Currently, groundwater samples are collected on a quarterly basis from four area monitoring wells containing benzene concentrations close to above OPS RBSLs. Earth Tech is currently awaiting a regulatory decision from OPS regarding future efforts at this site.

STATUS

OMA

EPR#:

Regulatory Driver: RCRA-I

COCs: Petroleum Hydrocarbons

MEDIA OF CONCERN:

Soil, Groundwater

PHASES	Start	End
ISC.....	198601	199101
CAP.....	199101	200610

RC: 200610

CLEANUP STRATEGY

OPS have been notified of this exceedence and recommends that a Tier 1A model be prepared as the most practical and efficient means for site closure. Continue to perform quarterly groundwater monitoring.

PAST MILESTONES

In September 1995, Fort Carson was issued a RCRA Part B Permit. This required the submission of 85 RFI work plans within a 180-day period. The immediate milestone then became the completion of that task. It was accomplished within the allowed time frame.

During calendar year 1996, the primary focus was to conduct several RFI investigations. Carson.

During calendar year 1996 and 1997, the primary milestones at Fort Carson were to obtain state approval for landfill caps at 3 locations, as well as, the removal plan for sludges at the Equalization Basin (an active site).

In May 1998, the sludges were removed from the Equalization Basin and the basin liner was decontaminated.

Between September 1999 and December 1999, a drainage channel was constructed down the municipal portion of Landfill 1 to replace a degraded culvert.

In 2002, no further action was granted by the CDPHE for Landfill 10 (SWMU 10/FTC-014), Landfill 12 (SWMU 12/FTC-016), and the Jet Spray Washers (SWMU 17/FTC-058).

In 2004, an IRA was conducted at Range 123 (SWMU 48/FTC-027).

In 2005, a No further action was granted by the CDPHE for the Range 123, (SWMU 48/FTC-027).

PROJECTED MILESTONES FOR CORRECTIVE ACTION SITES

Phase Completion Milestones (completion dates for all RCRA phases leading to LTM, excluding the following sites: CC SW025, CC SW047, and CC SW049 due to their active status):

RFI/CMS: FY06

DES: FY07

CMI(C): FY09

CMI(O): FY08

Completion Date of all CMI(C) Activities:

All remedies will be constructed by 2020, in accordance with RCRA Corrective Action goals (this goal may exclude the following sites: CC SW025, CC SW047, and CC SW049 due to their active status).

Completion Date of CC Program (including LTM phase):

Anticipated to be 2039

FORT CARSON IAP SCHEDULE



Current



Future

AEDB #	SITE TITLE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
CC-SW001	Inactive Landfill 1	DES										
		CMI(C)										
		LTM										
CC-SW006	Landfill 6	LTM										
CC-SW011	Landfill 11	DES										
		CMI(C)										
		LTM										
CC-SW021	Industrial Wastewater	RFI/CMS										
		LTM										
CC-SW022	Sewage Treatment Plant	RFI/CMS										
		LTM										
CC-SW-023	Sewage Treatment	DES										
		CMI(C)										
		CMI(O)										
		LTM										
CC-SW025	Range 121, Open Dumping	RFI/CMS										
		LTM										
CC-SW026	Equalization Basin	LTM										
CC-SW028	Battery	LTM										
CC-SW032	Golf Course Holding Pond	LTM										

FORT CARSON IAP SCHEDULE



Current



Future

AEDB #	SITE TITLE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
CC-SW033	Golf Course Sludge Spreading Area	LTM										
CC-SW-035	New Central Wash Rack (Active)	RFI/CMS										
		LTM										
CC-SW-047	Range 121, Open Detonation	RFI/CMS										
		LTM										
CC-SW049	Hazardous Waste and PCB Storage Facility (Permitted)	RFI/CMS										
		CMI(C)										
		LTM										
CC-SW052	Happy Hollow	RFI/CMS										
		LTM										
CC-SW163	Industrial Wastewater Lines	LTM										
CC-SW165	Battery Acid Neutralization Shop - Bldg 8110	LTM										
CC-SW166	Bldg. 8110, Former UST	LTM										
CC-SW-169	Bldg. 1211, Former UST	RFI/CMS										
		DES										
		CMI(C)										
		LTM										

FORT CARSON IAP SCHEDULE



Current



Future

AEDB #	SITE TITLE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
CC-SW-170	Construction Debris Area - Inactive Landfill 1	DES										
		CMI(C)										
		LTM										
CC-063	UST at Bldg 2492	CAP										
CC-066	UST at Bldg 3192	CAP										
CC-067	UST at Bldg 8200	IMP(C)										
CC-084	UST at Bldg 1515	CAP										
CC-085	UST at Bldg 1882											
CC-086	UST at Bldg 9606	IMP(C)										
CC-090	UST at Bldg 1982	CAP										
CC-098	UST at Bldg 9628	IMP(C)										
CC-101	UST at Bldg 9609											
CC-102	UST at Bldgs 980,981	CAP										
CC-103	UST at Bldg 1392	IMP(C)										

FORT CARSON IAP SCHEDULE



Current



Future

AEDB #	SITE TITLE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
CC-104	UST at Bldgs 9647, 9648	CAP										
	Program Costs	CAP										

PRIOR YEAR FUNDING

TOTAL:	\$	9,757,574
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CURRENT YEAR FUNDING

FY06	\$	3,006,000
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FUTURE YEAR FUNDING

<i>TOTAL FUTURE REQUIREMENTS:</i>	\$	19,439,000
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<i>TOTAL CC PROGRAM COSTS:</i>	\$	32,202,574
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Community Involvement

In 1994, Fort Carson was in the process of voluntarily forming a Restoration Advisory Board (RAB) when a local environmental organization petitioned the installation to form one. Initially, community involvement in the RAB was high, but has since declined. Information given to the public has increased the trust level of the community and RAB members.

Fort Carson's RAB was established in 1994 by Fort Carson in order to educate and inform interested citizens about Fort Carson's environmental restoration activities, and for representatives of the surrounding communities to provide input to Fort Carson for consideration in the environmental restoration decision making process. It is a citizen-based advisory group that provides the installation input for community decision-making that will be responsive to community needs and concerns. The RAB is also charged with distributing information about environmental restoration to the communities it represents.

Progress reports on corrective action processes and technical support to the RAB are key factors in promoting informed and valuable reviews and comments from this group. Public meetings are held, as appropriate or required, in order to provide additional forums for the community to provide their input. The community co-chair or a RAB member is invited to attend Fort Carson's annual IAP Meeting and provides input regarding the community's environmental restoration priorities. RAB members have been participants since 1997.

In December 1998, letters of introduction were mailed to the new neighborhoods that have formed in the past three years. These are to the immediate west and north of the Installation. As a follow up, Fort Carson conducted interviews with 11 respondents. The Community Involvement Plan also fulfills a requirement of the RCRA Part B Permit.